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EVALUATION OF THE CLINICAL EFFECTIVENESS OF THE USE OF DESENSITIZERS IN THE TREATMENT OF HYPERSENSITIVITY OF HARD TISSUES OF TEETH

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Abstract: Hypersensitivity of teeth, along with dental caries and periodontal diseases and the mucous membrane of the oral cavity, lips and tongue, is one of the common painful conditions that create uncomfortable sensations in the oral cavity and functional disorders (E.M. Kuzmina, 2003; J.C. Elliott, 1992). According to various researchers, about 15-68% of the world's population suffers from increased sensitivity of teeth.

It is considered that the problem of PCH has more than a century history, since back in 1900 A.Gizi described the symptoms of this pathology of the hard tissues of the teeth, made assumptions about the causes of its occurrence and gave recommendations for the elimination of this disease (A. Gysi, 1900). E.M. Kuzmina (2003) notes that the problem of PCH repeatedly It was the subject of discussion and controversy, including at the World Dental Congress held in 2002 in Vienna, the capital of Austria (M. Iijima, N. Tohda, Y. Moriwaki, 1992).

Keywords: hypersensitivity, hard tooth tissues, desensitizer, GLUMA® Desensitizer, remineralizing therapy, GC "Tooth Mousse".

Relevance. Hypersensitivity of teeth is manifested in a short-term painful reaction of exposed dentin in response to thermal (cold, hot drinks), chemical (sour, sweet), and mechanical (toothbrush, toothpick) stimuli. It should be noted that this pathology can occur after traumatic professional hygiene (damage to the enamel with tools, excessive polishing, especially in the area of the neck and root of the tooth)[2,3]. In addition to the pain reaction resulting from local causes and stimuli, this kind of pain can also occur in connection with certain pathological conditions of the body (the so-called systemic or functional hypersensitivity): psychoneuroses, endocrinopathies, diseases of the gastrointestinal tract, metabolic disorders, age-related hormonal changes and disorders, infectious and other concomitant diseases[1,9]. From year to year, the problem of prevention and treatment of hypersensitivity of hard tissues of teeth is becoming more and more urgent due to the increasing influence of local and general factors [5, 7, and 8].

Despite the high achievements of dental science and the constant updating of dental products, the problem of prevention and treatment of hypersensitivity of hard tissues of teeth remains relevant [4,6]. This pathology still belongs to the diseases that are the least successfully treatable, since the most effective treatment methods that could be used in the clinic for the treatment of patients with manifestations of this pathology have not been fully determined.

The purpose of the study. To give a comparative assessment of the clinical effectiveness of the use of modern desensitizers for the treatment of hypersensitivity of hard tissues of teeth, with different etiology of occurrence.

Materials and methods. To date, there are many desensitizers of various manufacturers operating on the basis of one or a combination of several mechanisms on the domestic market. The basis of many desensitizers is a modified dentine primer hydroxyethylmethacrylate (HEMA). Additionally, it is injected with drugs that cause the sealing of dentine tubules, fluorides and antibacterial components in various combinations. . To achieve this goal, the materials of scientific and medical resources on the subject under consideration were studied and analyzed due to the wide variety of combinations of drugs used to reduce the hypersensitivity of hard dental tissues. And based on the results obtained, drugs were selected to assess the clinical effectiveness of their use.

This study involved 50 patients divided into 2 equal groups. The age of the patients was in the range of 50-70 years. In the first group of patients, the drug was GC "Tooth Mousse" (Japan). The drug is a water-soluble cream containing a Recaldent complex consisting of CPP (casein phosphopeptide) and ACP (amorphous calcium phosphate), which has the ability to bind a large number of calcium and phosphate ions, keeping them in an amorphous non-crystalline state and provides high adhesion of the drug to the hard tissues of the tooth, pellicle, plaque components and soft tissues oral cavity, thanks to which it provides a prolonged effect of the drug. The paste applications were carried out in clinical conditions in accordance with the manufacturer's instructions for 3 minutes. Patients were advised to abstain from eating for 30 minutes. Each patient was instructed on the use of this drug at home. The drug was applied 2 times a day with a dry finger or applicator after brushing teeth for 5 minutes. For better penetration of the drug into the interdental spaces, it was recommended to use floss. During the procedure, it was not recommended to spit and swallow saliva. No additional mouthwash was required. You shouldn't have eaten or drunk for the next 30 minutes. Control examinations of patients were carried out at the beginning of the study (primary examination) and during the use of the remineralizing drug - after 1 and 2 weeks. The data obtained were recorded in a special survey card.

The drug Gluma Desensitizer (Heraues Kulzer, Germany) was chosen as the basis for the treatment of patients in the second group. Gluma Desensitizer is a drug that includes HEMA – (-hydroxyethyl)methacrylate, glutaraldehyde and distilled water. The mechanism of action of this drug is that it coagulates the proteins of the dentine fluid inside the dentine tubules, forming transverse partitions blocking the movement of the dentine fluid, which reduces the sensitivity of the dentine. Due to the presence of HEMA in the composition, the depth of its penetration increases to 200 microns (0.2 mm). The paste applications were carried out in clinical conditions in accordance with the manufacturer's instructions. To begin with, the dentin being treated was cleaned under local anesthesia, and then rinsed with water. The mucosa was protected with a cofferdam. Then, the small amount of GLUMA® Desensitizer needed for treatment was applied to the treated dentin surface with a brush and left for 30 – 60 seconds. At this time, we carefully monitored that the GLUMA® Desensitizer did not drain from the overlay area. After that, the surface was carefully dried with a jet of air until the liquid film disappeared and the surface stopped shining, then washed with plenty of water. Control examinations of patients were carried out at the beginning of the study (primary examination) and during the use of the remineralizing drug - after 1 and 2 weeks.

The results of the study. The results of the study showed that the patients of the first group, when treated with a remineralizing paste on a water basis GC Tooth Mousse, had notes about the pleasant taste and smell, as well as the convenience and comfort of using this paste. After using it, a feeling of fresh breath remained for a long time. During the study period, according to the control dental examinations, there were no cases of locally irritating and allergizing effects of the paste on the oral mucosa. Thus, regular use of the remineralizing drug contributed to the fact that 22 patients (88%) had no complaints about tooth sensitivity, and 3 (12%) had reduced symptoms of this pathology. In patients of the second group, on whom the GLUMA® Desensitizer was used, before treatment, all patients clinically determined the presence of a noticeable pain response to stimuli. After treatment, dental hypersensitivity disappeared in 20 (80%) patients, and decreased in only 5 (20%). Also, we found that with repeated local application of the drug GLUMA® Desensitizer, the therapeutic effect is enhanced. The results of treatment of patients were evaluated using basic (survey, examination) and additional (thermo diagnostics) research methods.

Conclusions. Thus, our studies have shown that the most effective means to reduce the sensitivity of teeth was the remineralizing paste on a water basis GC ToothMousse.

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